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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/415,121	10/08/1999	TAKESHI KOBAYASHI	10873.444US	4355

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EXAMINER
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NGO, HUNG V

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 11/29/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/415,121

Applicant

Kobayashi et al

Examiner

Hung V. Ngo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Sep 27, 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-13 is/are pending in the application.
- 4a) Of the above, claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## -Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sunada (US 5,508,557) in view of Junya (JP05047954) and Cozar et al

Sunada discloses an electronic element (4); a first lead (3) with an element placement pad (3c); and a second lead that is disposed at a distance from said element placement pad, wherein said electronic element, element placement pad, part of said first lead, and part of said second lead are sealed with a sealing resin (2), said first lead being bent in an S shape (Fig 1), the bending depth d thereof being at least as large as the thickness t of said first lead (Fig 1). The limitations of "wherein the sealing resin is injected from a position on a longer side of the sealing resin package, said position being offset toward one shorter side thereof" of claim 1 have been considered, but does not result in a structural difference. The presence of process limitations in product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to that product. In re Stephens 145 USPQ 656 (CCPA 1965).

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Re claim 3, wherein the vertical, horizontal, and height outer dimensions of said sealing resin are each no greater than 1.0 mm (col 3, lines 22-25).

Re claim 4, wherein widths of inner lead parts (3c) of said first and second external leads within said sealing resin are substantially uniform (Fig 2).

The teaching of Sunada as discussed above does not disclose the lead having thickness  $t$  of less than 0.1 mm and, and the thickness  $T$  of said resin on a non-device side of said element placement pad being smaller than said bending depth  $d$  (re claim 1), wherein the spacing between said element placement pad and said second lead is no greater than 0.12 mm (re claim 2), wherein the thickness of said electronic element is substantially the same as the thickness  $t$  of said first external lead (re claim 5), wherein the bending radius  $R$  on the outer surface of a bent part of said first external lead near the bottom surface of said sealing resin is at least 0.05 mm and is no greater than the lead thickness  $t$  (re claim 7), wherein the sealing resin contains a filler, whose particle diameter is not greater than half the bending depth  $d$  of the said lead or less than 50 microns (re claim 8).

Re claim 1, Cozar et al teach that it is well known in the electrical art to provide a lead having thickness of less than 0.1 mm (col 4, lines 35-45) and having a mechanical strength to mount on the printed circuit board (col 2, lines 30-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the lead having less than 0.1 mm in thickness for the purpose of having a mechanical strength to mount on the printed circuit board.

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Re claim 1, Yunya discloses the thickness  $T$  of said resin on a non-device side of said element placement pad being smaller than said bending depth  $d$  (Fig 1) for reinforcing the lead and preventing deformation during shipping steps. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the leads of Sunada by employing the thickness  $T$  of said resin on a non-device side of said element placement pad being smaller than said bending depth  $d$  for reinforcing the lead and preventing deformation during shipping steps.

Re claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the spacing of Sunada by employing the spacing of no greater than 0.12 mm between said element placement pad and said second lead, since it has been held that where the general conditions of a claim are disclosed in prior art, discovering optimum ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re claim 5, Sunada recites "the size of the diode 1 as a whole can be made as small as possible" (col 4, lines 45-50). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thickness of the electronic element of Sunada by employing less than 0.1mm in thickness for the purpose of mounting a plurality of electronic components on a printed circuit board as taught by Sunada.

Re claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the bending radius  $R$  of Sunada by employing at least 0.5 mm,

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since it has been held that where the general conditions of a claim are disclosed in prior art, discovering optimum ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re claim 8, it is well known in the electrical art to use a filler having diameter of less than 50 microns with the sealing resin for dissipating heat. it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the filler with the sealing resin of Sunada for the purpose of dissipating heat.

#### ***Response to Arguments***

Applicant's arguments filed 09-27-2001 have been fully considered but they are not persuasive.

Applicant argues (1) that none of the references describes or suggests the injection ports being located on the longer side that offset toward the shorter side. The examiner disagrees. With respect to (1), this limitation does not result in a structural difference. The presence of process limitations in product claims, which product does not otherwise patentably distinguish over prior art, cannot impart patentability to that product. In re Stephens 145 USPQ 656 (CCPA 1965).

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V. Ngo whose telephone number is (703) 308-7614. The examiner can normally be reached on Tuesday to Friday from 8:30 am to 06:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard, can be reached on (703) 308-3682.

The fax phone number for this Group is (703) 305-3431 or (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

*Dean A. Reichard 11/9/01*

DEAN A. REICHARD  
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